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NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

A PROCEDURE FOR AN AFS TO PASS UNFILLED
AIRCRAFT CARRIER FILL
REQUISITIONS TO A NAVY SUPPLY CENTER

by

William S. Curry

December, 1991

Thesis Advisor:

Thomas P. Moore

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A Procedure for an AFS to Pass Unfilled
Aircraft Carrier FILL Requisitions
to a Navy Supply Center

by

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Submitted in partial fulfillment
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ABSTRACT

Presently, aircraft carriers on deployment request Fleet Issue Load List (FILL) material from supporting AFS ships on a "Fill or Kill" basis. If the material is available on the AFS, it is issued and delivered to the aircraft carrier during the next underway replenishment (UNREP). If the requested material is not-in-stock (NIS) the requisition is cancelled by the AFS. The aircraft carrier is notified of requisition cancellations during the underway replenishment. The aircraft carrier then cancels the outstanding requisition on its own inventory system, and reorders the material at the next scheduled underway replenishment or from an appropriate Naval Supply Center.

This thesis suggests a procedure for an AFS to automatically forward cancelled aircraft carrier requisitions for Fleet Issue Load List material to a Navy Supply Center. During the study information was obtained from several on-site visits to an AFS and an in-depth review of current guidelines and procedures for AFS supply support and aircraft carrier requisitioning procedures. The procedure developed provides the AFS with a method for passing aircraft carrier requisitions for not-in-stock Fleet Issue Load List material, reducing requisition lead-time and aircraft carrier administrative work-load. Additional research is required to evaluate specific implementation problems and actual cost savings.

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I. INTRODUCTION

A. BACKGROUND

Today's United States Navy commitments require aircraft carriers and their Battle Groups to remain deployed and on station for long periods of time. The Battle Group's operating areas are generally many hundreds of miles away from shore bases where stocks of food, spare parts, and consumable items could be obtained.

The aircraft carrier and Battle Group would be unable to remain on station for a long period of time if not for the AFS. The AFS is a Combat Logistics Force (CLF) ship that is used to replenish the aircraft carrier and other ships in the Carrier Battle Group. The AFS is designed to deliver frozen, chilled and dry food products, as well as repair parts and consumable items. The ship is equipped to transfer material underway via an alongside station as well as via "vertical replenishment using two UH-46 'Sea Knight' helicopters".¹

At sea, logistic replenishment (LOGREP) procedures currently require an aircraft carrier to submit a requisition message to an AFS to fill orders for replenishable material. The AFS carries material that is listed in the Consolidated

¹Janes Fighting Ships 1988-89, New York, NY: Jane's Publishing Inc., pg. 757.

Afloat Requisitioning Guide Overseas (CARGO) such as food (under the title Subsistence Requisitioning), lubricants and gases (under the title AO Deck Load), and items that are carried based on previous deployed units demands. These items are listed in the Fleet Issue Load List (FILL). The FILL:

Represents the range of Prepositioned War Reserve Stock material carried on board combat stores ships of the Fleet to support projected requirements of deployed forces under mobilization conditions. It serves as a shopping guide for deployed Fleet units to requisition material carried by the AFS (Combat Stores Ships). The FILL is based on actual demands from deployed Fleet units and includes items most requested, plus a limited number of items to support the Chief of Naval Operations (CNO) designated systems/equipments²

The aircraft carrier requisition message describes the items and quantities desired. Each item listed in the requisition message for Fleet Issue Load list (FILL) material is requested on a "fill or kill"³ basis. The statement "fill or kill" means that if requisitioned material is available on the AFS, the requisition is processed and sent to "fill" the requisitioner's needs. If, however, the material is not available on the AFS, the requisition is cancelled, in effect "killing" it.

²Navy Supply Publication 4998, Consolidated Afloat Requisitioning Guide Overseas, Triennial Change No.4, Navy Ships Parts Control Center, 1 June 1991, pg.i, para. 1(a).

³CINCLANTFLT INSTRUCTION 4210.1B, Atlantic Fleet Requisition Guide, Change 2, 22 September 1981, pg.III-4, para. 3106.

The requisitioner discovers this "fill or kill" outcome during the actual underway replenishment (UNREP). The requested material, issue/receipt documents, and cancellation documents are physically passed by way of helicopter or highline from the AFS to the aircraft carrier. The material received is processed, stowed and the carrier's inventory records updated to reflect the material actually received by the aircraft carrier. The aircraft carrier's inventory records are also updated by voiding the outstanding requisitions that were "killed" by the AFS.

At the outset of this thesis, the procedure to be developed was designed to enable the AFS to forward all unfilled "killed" aircraft carrier FILL requisitions. However, it was discovered in an interview with the Stock Control Officer aboard the USS MARS (AFS-3) that the material would not be received by the carrier any sooner if the AFS forwarded the aircraft carrier's requisitions to a Navy Supply Center. The reason is that, normally, when requisitioned FILL material was NIS aboard the AFS, an AFS requisition has already been submitted by the AFS to a Navy Supply Center for the NIS FILL material. This AFS requisition is intended to replenish the AFS stock prior to the carrier's request for the NIS FILL material. Note also that the material ordered by an operational overseas aircraft carrier from a Navy Supply Center would still be delivered to the carrier via an AFS. Thus, an overall failure in the supply support system would

have to occur to allow the carrier to receive NIS FILL material any sooner through means other than the AFS requisitioning process. The exception to the AFS being able to receive and deliver NIS FILL material to a carrier faster than the carrier requisitioning the NIS material itself can occur during the last UNREP that an aircraft carrier has with an AFS during the carrier's deployment. In this situation, the aircraft carrier must order, by requisition message to a Navy Supply Center, any NIS material that was "killed" by the AFS and which is still needed. Making the carrier re-order the cancelled material causes lost requisition lead time. The lost requisition lead time encompasses the interval between the time the AFS cancels the requisition and the time the carrier receives the cancelled requisition after the UNREP.

The Logistics Replenishment (LOGREP) cycle is the complete material replenishment cycle for a carrier or other deployed ships. The LOGREP cycle begins with the Logistic Replenishment Plan (LOGREP Plan)⁴ message. The LOGREP Plan message is a monthly message that states the time the actual underway replenishment will take place, and when the carrier should submit its requisition message to the AFS. The governing Fleet Commander writes and transmits the LOGREP Plan message to the AFS and the Aircraft Carrier Battle Group. The

⁴Commander, Service Force, Sixth Fleet Instruction 4000.1P, Sixth Fleet Logistics Manual, 25 September 1989, pg. 2-1.

carrier identifies needed material and generates and transmits its requisition message to the AFS in accordance with the LOGREP Plan. The LOGREP cycle ends with the carrier's receipt of the requested material or the notification of the cancellation of the requisition by the AFS. The length of the LOGREP cycle can vary from once a week to once a month, depending on the theater of operation and the type and number of operations the aircraft carrier is conducting, as well as the distance the AFS must travel to replenish itself. The following list is a generalized step-by-step description of the events in a Logistics Replenishment (LOGREP) cycle.

STEP 1 - The aircraft carrier generates and transmits the requisition message to the AFS in accordance with the Fleet Commander's LOGREP Plan message.

STEP 2 - The AFS receives the requisition message from the aircraft carrier.

STEP 3 - The AFS supply department processes issue documents and begins pulling parts from their storage locations and staging them on the AFS for the actual delivery. When the material requested is not in stock on the AFS, a requisition document is annotated as cancelled and passed to the aircraft carrier during the UNREP.

STEP 4 - AFS meets with the carrier and transfers the requested material, issue/receipt documents and cancellation documents on the date specified in the LOGREP Plan message.

STEP 5 - The aircraft carrier stows the received material and processes receipt and cancellation documents on its inventory information system.

B. PURPOSE

The purpose of this thesis is to develop a procedure that enables an AFS to pass designated, unfilled aircraft carrier FILL requisitions to a Navy Supply Center prior to the aircraft carrier returning to homeport after its last UNREP. This study includes a review of the requisitioning procedures and equipment used in processing requisition messages and the issuing of material aboard an AFS. The motive for developing this procedure is to reduce requisition lead time. Specifically, the intent is to reduce the interval of time it takes to get a carrier FILL requisition to a Navy Supply Center for processing after it has been found to be NIS on an AFS. The development of a procedure for an AFS to pass NIS carrier FILL requisitions to a Navy Supply Center would also eliminate the duplication of work required for a carrier to reorder cancelled material. Additional requisition lead-time would then be available to a Navy Supply Center for issuing and delivering FILL material cancelled by the AFS. This additional lead time would improve the likelihood of immediate availability of the requested material for the aircraft carrier upon its return to homeport.

C. RESEARCH CONCEPTS AND METHODOLOGY

The major research concepts and methodology of this study included:

- The development of a procedural flow chart and step by step procedures whereby aircraft carrier requisitions would be passed by an AFS to a Navy Supply Center for processing, when the AFS doesn't have the material.
- The investigation into the hardware/software capabilities and compatibilities required to handle the requisition message generation.
- The study of the generation, use and routing of requisition messages from an aircraft carrier to a Navy Supply Center via the AFS. This study included the examination of the changes to message requisitioning procedures and requirements necessary to accomplish the requisition forwarding procedure.
- The review and assessment of AFS shipboard personnel requirements necessary to implement the requisition forwarding procedure.

D. SUMMARY OF SUBSEQUENT CHAPTERS

The remainder of this thesis consists of the following chapters:

1. Chapter II - Current Aircraft Carrier Supply Procedures. This chapter discusses the step-by-step material requisitioning process aboard the aircraft carrier. It begins with the initial request made by a repair technician for a part to the point when the requisition message is sent to the AFS by the carrier. It reviews present aircraft carrier message requisition requirements, and procedures for submission of message requisitions to Navy Supply Centers and AFS's. It also discusses why the requisition message must have a specific Content Indicator Code when submitted to an AFS by an aircraft carrier.
2. Chapter III - Current AFS Replenishment Procedures For Aircraft Carriers. In this chapter, the aircraft carrier replenishment cycle is discussed as it relates to the AFS. This process begins with the receipt of the

aircraft carrier requisition message and ends with the delivery of material to the carrier or notification to the carrier that the requisition has been cancelled because the material was NIS on the AFS. The current procedure for updating the AFS inventory records after an UNREP is also presented.

3. Chapter IV - A Procedure to Forward Unfilled Aircraft Carrier FILL Requisitions. Chapter IV describes a new procedure to reduce the amount of requisition lead time lost due to current "fill or kill" procedures aboard the AFS. A flow chart of step by step procedures for the entire process is provided. Chapter IV includes the discussion and results of an experiment to estimate the additional work-load required of the AFS Supply Department personnel to conduct the new procedure.
5. Chapter V - Summary, Advantages, and Recommended Follow-On Research. Conclusions concerning the new procedure to requisition FILL material are discussed. A general discussion of the advantages and benefits associated with the use of this new procedure is presented as well as recommendations for follow-on research.

II. CURRENT AIRCRAFT CARRIER OVERSEAS REPLENISHMENT PROCEDURES

Material needs aboard an aircraft carrier are determined within each divisional work center. The work center's division officer certifies approval of each requisition with his or her signature. The approved divisional work center requisition is then submitted to the Supply Department for determination of supply status: fill or back-order. If the material is available aboard the carrier, the Supply Department issues the material to the divisional work center.

The quantity issued is entered into the carrier's Shipboard Non-Tactical Automated Data Processing (SNAP-1) computer (discussed in Section D), where the quantity issued is deducted from the on-hand balance. If the new on-hand balance is below an inventory level previously established as the re-order point, the SNAP-1 computer will generate a replenishment requisition to replace the carrier's stock of issued material. If the carrier also happens to be out of stock for the material, the requisition of the divisional work center is back-ordered and the aircraft carrier's Supply Department generates a requisition to fill the back-ordered material. While deployed overseas the aircraft carrier will submit these requisitions, for both stock replenishment and to

fill needs for back-ordered material, via a requisition message to an AFS.

An in-depth explanation with a flow chart of the aircraft carrier shipboard requisitioning process follows. The flow chart can be found in Figure 1.

A. Material Need Identified. The divisional work center personnel aboard the aircraft carrier identify divisional material requirements. These material requirements are communicated to the division's Repair Parts Petty Officer (RPPO). The person assigned the collateral duty of RPPO is the division's link to the ship's supply process.

B. RPPO Gathers Information. The Repair Parts Petty Officer researches and gathers information concerning the divisional material requirement, such as national stock number, distribution code, unit of issue, quantity desired, unit price, extended price, and nomenclature of the item.

C. Requisition Approval. Once the RPPO has obtained all the required requisition information, the RPPO obtains the requisition approval from the work center's Division Officer. The Division Officer has the authority to approve or disapprove material requisitions for his work center.

D. Material Requested Via SNAP-1. Once the Division Officer approves the request for the material, the RPPO submits the request to the carrier's Supply Department via SNAP-1. SNAP-1 is the Shipboard Non-Tactical Automated Data Processing Program. It is a computer system that uses a

mainframe computer and terminals to automate shipboard supply procedures, inventory recordkeeping and requisitioning processes. The RPPO types the material data into the SNAP-1 system via a menu screen which prompts the RPPO for the data. After the data is entered, the SNAP-1 system assigns a requisition number to the RPPO's material request. The SNAP-1 system reviews its inventory files to try to find the national stock number and determine the on-hand inventory balance.

E. Material Available. If the material is available, the SNAP-1 system is designed to generate a Pull Ticket for the requested material.

F. SNAP-1 Generated Pull Ticket. The Pull Ticket printed by the SNAP-1 system contains the information necessary to issue the requested material. Information on the Pull Ticket shows the material's storage location and the name of the divisional work center requesting the material.

G. Supply Department Issues Requested Material. Using the Pull Ticket, personnel in the Supply Department can locate the material and issue the proper quantity to the requesting divisional work center.

H. Material Not Available. If the SNAP-1 review of the inventory files indicates that the requested material is not on-hand, then the requisition is back-ordered for the requesting divisional work center.

I. SNAP-1 Replenishment, Back-Order File. When a Pull Ticket is issued for available material, the line item on-hand

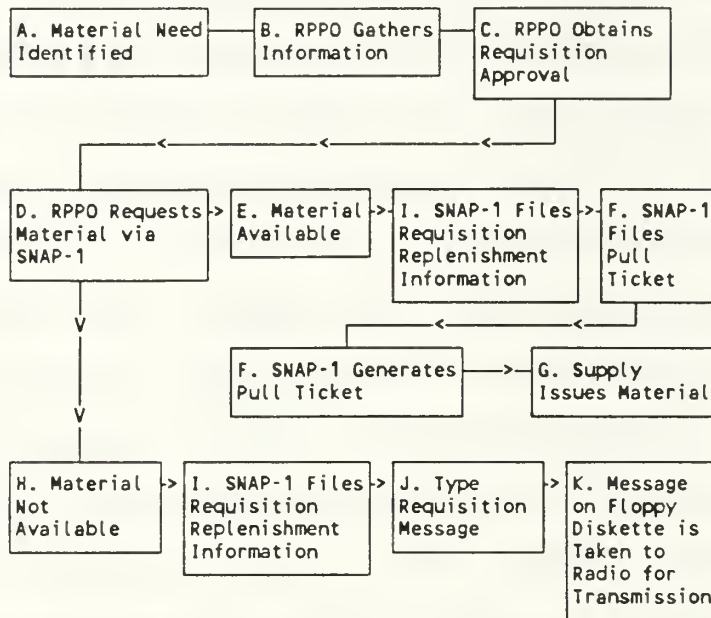
balance is reduced by the amount issued. Supply Department personnel, using a built-in software program, query the SNAP-1 system for replenishment information. SNAP-1 reviews the on-hand balance of each line item carried aboard the aircraft carrier and compares the on-hand balance against the re-order level for that item. If the on-hand quantity is below the level prescribed as the re-order point a requisition is generated. The SNAP-1 quantity requisitioned will be the difference between the on-hand balance and the shipboard allowance. This information is placed in a Replenishment Storage File in the SNAP-1 system. The SNAP-1 system also maintains a Back-Order Storage File. The Back-Order Storage File is a summary of requisitions for material that were not on-hand when the divisional work centers requested them. The requisitions in the Replenishment Storage File, and the Back-Order Storage File are copied to a computer system that has the software to convert the SNAP-1 files to DOS readable files. This conversion process will be discussed in more detail in Chapter III as the AFS has to use the same procedures to generate requisition Messages.

J. Requisition Message Generation. As discussed in Chapter I, the date the requisition message is to be sent by the aircraft carrier to an AFS is communicated to the carrier in a "LOGREP Plan" message from the Fleet Commander. Using the information that has been converted to DOS readable files from SNAP-1, the aircraft carrier generates a requisition

message on an IBM or IBM compatible computer by importing the converted DOS files into a word processing program. The requisition message is created by adding the required message address, subject information, and Content Indicator Code (discussed in Section B of this chapter), to the requisition information imported from SNAP-1.

K. Requisition Message Taken to Radio. The edited requisition message is saved in a word processing file on a floppy diskette. The floppy diskette, with the requisition message on it, is taken to the Radio Division where the floppy diskette is placed in an IBM or IBM compatible computer and read by the Radio Division's computer system. The computer is connected to radio transmission equipment. Once the requisition message is loaded into the computer, a person in the radio division gives a transmit command to the computer. This initiates a software program within the computer that sends the information from the computer into the connected radio transmission system where the requisition message is converted into electrical impulses that are transmitted through an antenna and off the aircraft carrier.

Figure 1 - Aircraft Carrier Requisitioning Process



While operating overseas, current supply requisitioning procedures require a deployed aircraft carrier to submit supply requisition messages to an AFS designated in the "LOGREP Plan". The supply requisition messages include requests for material listed in Chapter VI, (Fleet Issue Load List (FILL)), of the Consolidated Afloat Requisitioning Guide Overseas (CARGO).⁵ Another requisition message is required however, for material that is not found in the FILL. This latter requisition message is submitted by the aircraft carrier to a Navy Supply Center.

⁵Navy Supply Publication 4998, Consolidated Afloat Requisitioning Guide Overseas, Triennial Change No.4, Navy Ships Parts Control Center, 1 June 1991, Chapter IV.

After the last UNREP with an AFS during a carrier's deployment and prior to its return to homeport, the carrier will transmit requisition messages to a Navy Supply Center that will include requisitions for CARGO material that was NIS during the last UNREP with the AFS. This NIS material will be needed as soon as possible after the carrier's return to homeport.

A. REQUISITION MESSAGE FROM AN AIRCRAFT CARRIER TO AN AFS

The requisition message transmitted from an aircraft carrier to an AFS, is in a different format from the requisition message sent to a Navy Supply Center. One of the differences between the two messages is the Content Indicator Code, which will be discussed in Section B. The format for the requisition message to a Navy Supply Center is described in Section D.

The requisition message sent to an AFS is submitted in the following format for each line item requisitioned:⁶

06121/003671466/EA/00150/00150/0012/NSS01

where: 06121 - FILL Item Number

003671466 - National Item
Identification Number

EA - Unit of Issue

00150 - Quantity

00150 - Quantity Repeated

⁶Ibid, Chapter 1, pg. I-13.

(Quantity is repeated to protect against human errors and errors due to any message transmission problems.)

0012 - Requisition Serial Number

NSS01 - Supplementary Address

(The Supplementary Address identifies the Divisional Work Center or Locker Location for the requisitioned material.)

B. CONTENT INDICATOR CODE REQUIREMENT

A Content Indicator Code is found at the beginning of every military message. It is a four letter code used jointly by the Army, Navy, and Air Force, to describe the general content of the message. It is used more specifically by the receiver of a message to determine the form the received message is to be produced in, i.e., paper, paper tape, or punch cards. The receiver of the message has the software in his message receiving equipment needed to produce specific forms of an incoming message based on different Content Indicator Codes. The Content Indicator Codes are found in the Joint Army, Navy, Air Force Publication (JANAP) 128.⁷

An important requirement in an aircraft carrier requisition message to an AFS is the specific Content Indicator Code "IAZZ". Sixth Fleet specifically requires the Content Indicator Code "IAZZ" to be used in requisition

⁷Joint Army, Navy, Air Force Publication (JANAP) 128, Content Indicator Code, February, 1985, pg. B-1 to B-22.

messages to AFS's.⁸ No specific Pacific Fleet references could be found requiring the "IAZZ" requirement on requisition messages to AFS's. However, prior to an aircraft carrier's transmission of a requisition message, the AFS's in the Pacific Fleet tell the carriers, via message, to use "IAZZ".⁹

The Content Indicator Code "IAZZ" is used to generate a tape copy of the requisition message which can then be input directly to the AFS computer. It improves the speed and accuracy of requirements processing which ultimately improves service to the customer.¹⁰

The Content Indicator Code "IAZZ" is a vital key to the ability of the AFS to generate a paper tape copy of the aircraft carrier requisition message. Failure to use "IAZZ" on a LOGREP message results in the AFS having to send a message to the requisitioning aircraft carrier. The AFS's message asks the aircraft carrier to re-transmit the original message including the Content Indicator Code of "IAZZ". The re-transmission of the requisition message by the aircraft carrier is required as there is no way for the AFS to generate a tape copy of the requisition message other than re-typing the entire requisition message and converting it into a punch

⁸Commander Service Force Sixth Fleet Instruction 4000.1p, Sixth Fleet Logistics Manual, September 1989, pg. 4-3, para.404.b.

⁹Interview between S. Crozier, Lt. SC, USN, USS Mars (AFS-1), and the author, 2 October 1991.

¹⁰Commander, Service Force, Sixth Fleet Instruction 4000.1p, Sixth Fleet Logistics Manual, September 1989, pg. 4-6, para. 404.h.10.

tape. The typing of the aircraft carrier requisition message by the AFS would take more time than just having the aircraft carrier add the "IAZZ" on the original message and re-transmitting it.

When the aircraft carrier's requisition message is received by the AFS's radio receiver, the "IAZZ" content indicator code is read by the receiving system. This initiates the punching of a paper tape that contains a copy of the requisition message. The paper tape copy of the message is read into the AFS's SNAP-1 system, which then prints Pull Tickets for each requisition contained in the message.

C. AIRCRAFT CARRIER MATERIAL RECEIPT/CANCELLATION PROCEDURES

The aircraft carrier receives the material requested from the AFS during the Underway Replenishment (UNREP). A packet of receipt and cancellation documents is physically received from the AFS during the UNREP. The information on these documents is entered into the aircraft carrier's SNAP-1 system, to update the aircraft carrier's inventory records. SNAP-1 will adjust the inventory records to show the new balances for the material received. Requisitioned material that was not in stock will have cancellation documents in the packet received from the AFS. The information on the cancellation documents is manually entered into the carrier's SNAP-1 system where the corresponding outstanding requisition numbers will be cancelled for the appropriate line items.

Since no changes occurred in the aircraft carriers on-hand stock, due to the AFS not having the requested material, no corresponding adjustments will be made to the actual inventory balances. SNAP-1 has the ability to produce a printout of those items that still need to be ordered. This screening process provides the carrier's Supply Department with the necessary information to generate the next requisition message. At this point, the aircraft carrier supply personnel talk with the requesting divisions to determine the urgency of need for the material that was not in stock on the AFS. If the requesting division desires the previously cancelled material upon arriving at its homeport, the carrier's Supply Department will generate a requisition message. The requisition information in this message is sent to the Navy Supply Center at the aircraft carrier's homeport via the Defense Automatic Addressing System in Ohio.

Prior to departure from its overseas operating area, the aircraft carrier will send a message to its parent Navy Supply Center. This message informs the Navy Supply Center to hold all the material issued for the carrier until its arrival in homeport. This precludes material being shipped overseas unnecessarily after the aircraft carrier's departure from its overseas operating area to return home.

D. REQUISITION MESSAGE TO A NAVY SUPPLY CENTER FROM AN AIRCRAFT CARRIER

A message requisition is prepared and transmitted to the appropriate Navy Supply Center from an aircraft carrier via the Defense Automatic Addressing System (DAAS).

DAAS is a "real time" digital computer system which utilizes the Automatic Digital Network switching centers of the Defense Communications System to receive and automatically forward MILSTRIP messages to the proper addressees. A message to DAAS may include multiple requisitions, follow-ups, requisition modifiers, cancellation requests, etc., provided that each document included in the message is limited to 66 card columns of data. Messages are forwarded via AUTODIN which automatically provides the addressee with a punched card or magnetic tape image for each document included in the originator's message, thereby precluding the necessity of any message handling or keypunch effort by the addressee.¹¹

A DAAS message transmitted from an aircraft carrier is addressed to DAAS DAYTON OH, where the DAAS message is received and retransmitted to the address indicated by the Routing Identifier in the Military Standard Requisitioning and Issue Procedure (MILSTRIP) data of each requisition.

The Military Standard Requisitioning and Issue Procedures (MILSTRIP) will be used for ordering all material from the Navy Supply System, the Defense Logistics Agency, and the General Services Administration. MILSTRIP requisitioning is based upon the use of a coded, single line item document for each supply transaction.¹²

¹¹Navy Supply Publication 485, Afloat Supply Procedures, Navy Department, Naval Supply Systems Command, Revision 2, 1 February 1984, pg. 3-45, para. 3028.2a.

¹²Ibid, pg. 3-10, para.3020.

Navy Supply Publication 485 paragraph 3028.2.c, requires the supply requisition data on a DAAS message to include the 66 card columns (cc) of a DD Form 1348-6 (Single Line Items Requisition System Document). Appendix 1 contains a reproduced copy of a DD Form 1348-6. The 1348-6 may be used as a MILSTRIP requisitioning document. The message sent by a carrier to a Navy Supply Center via DAAS will have the following types of MILSTRIP entries for each line item requisitioned:¹³

A01/NOZ/S/5955008144675/EA/00001/V4602212752533/R/YA2345/A/YC/9N/FK5/04/777/2C

A01 - Document Identifier - identifies the purpose of the document (e.g., requisition, referral order, supply status, follow-up, or cancellation request).

NOZ - Routing Identifier - is used to identify the intended recipient of a supply document.

S - Media and Status Code - indicates the type of requisition status information requested, i.e., who is to receive status, and how status is to be furnished, i.e., by what communications media.

5955008144675 - National Stock Number - is used to identify an item of material in the supply distribution system.

¹³Ibid, pg. 3-12 to 3-19, para 3023.

EA - Unit of Issue - is an abbreviation for the units used for requesting, issuing, and recording of this item, i.e., EA, DZ, GL, HD, etc.

00001 - Total Quantity Ordered - the total quantity requested, measured in units of issue.

V4602212752533 - Document Requisition Number - is a fourteen digit nonduplicative number constructed to uniquely identify the requisition. It contains a letter to identify the military service, a five digit number to identify the requisitioner, a four digit number for the Julian date, and a four digit number for the serial number of the requisition.

R - Demand Code - indicates to the management element of a distribution system whether the demand is recurring or non-recurring.

YA2345 - Supplementary Address - the requisitioner may use this for local information to identify locker location of the requisitioned material or the divisional work center to which the requisitioned material is to be delivered.

A - Signal Code - designates the fields (card columns) which contain the intended consignee and the activity to receive the bills and make payment, when applicable.

YC - Fund Code - is used to cite accounting data on Navy requisitions.

9N - Distribution Code - indicates a monitoring activity that will receive supply and shipment status information on the requisition.

FK5 - Project Code - identifies the type of activity or weapons system and the purpose for which the material is being procured.

04 - Priority Designator - determines the time frame within which the requisition will be processed.

777 - Required Delivery Date (Julian Date) - is the specific Julian date when the material is required by the requisitioner.

2C - Advice Code (optional) - is used by the requisitioner to provide special instructions to the supply source, such as "Do not substitute," "Do not back-order," etc.

The DAAS requisition message is received and processed at the Navy Supply Center designated by the aircraft carrier in the Routing Identifier. On-hand material at the designated Navy Supply Center is packaged and sent to a homeport storage area where it will await the arrival of the aircraft carrier. The aircraft carrier provides shipping instructions to the Navy Supply Center via another message, "indicating that requisitioned material cannot be received by the aircraft carrier prior to departure from an overseas area, therefore all material issued by the Navy Supply Center for the aircraft carrier is to be held at the Navy Supply Center pending the carrier's return to homeport".¹⁴ Requisitions for material that is not in stock at the Navy Supply Center are back-

¹⁴Ibid, pg. 1-24, para. 1070.2.e.2.

ordered with the status of the requisition sent to the aircraft carrier for tracking purposes.

This introduction to the DAAS and AFS requisition message format will aid in understanding the procedural changes required for the AFS to pass unfilled aircraft carrier FILL requisitions to a Navy Supply Center. Chapter IV will present the necessary changes to current procedures to allow an AFS to pass unfilled aircraft carrier FILL requisitions.

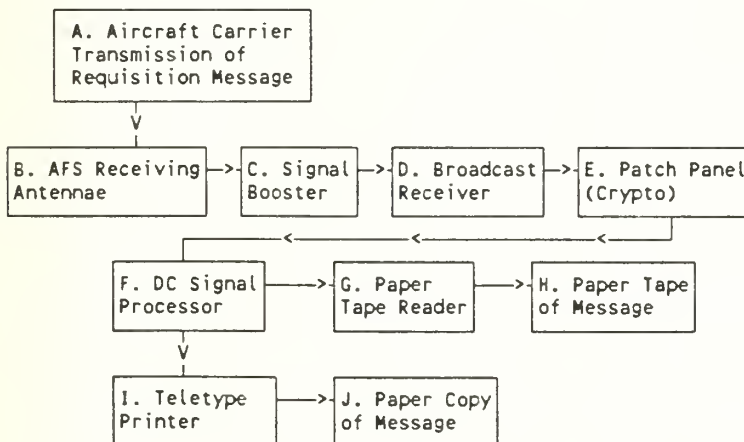
III. CURRENT AFS SUPPLY SUPPORT PROCEDURES

Current AFS supply procedures rely extensively on the Content Indicator Code "IAZZ," previously mentioned in Chapter II. When read by the AFS's radio receiving system, the Content Indicator Code prompts the output of a paper tape of the aircraft carrier requisition message. Note that this requirement will be essential to the new procedure to pass requisitions by the AFS for the requisitioning aircraft carrier (see Chapter IV).

A. REQUISITION MESSAGE RECEIPT

Figure 2 is a flow chart of the requisition message communication process with the receipt of the aircraft carrier requisition message by the AFS to the delivery of a paper tape of the message to the AFS's Supply Department. An explanation of the process follows the flow chart.

Figure 2 - Requisition Message Communication Process



A. Aircraft Carrier Transmission of Requisition Message.

The aircraft carrier's radio transmission of the requisition message is the first step in receiving the necessary information for the AFS to start the UNREP process.

B. AFS Receiving Antennae. The aircraft carrier's radio transmission of the requisition message is received by way of the AFS's receiving antennae and sent via an attached cable to the Signal Booster.

C. Signal Booster. The signal booster amplifies the signal and sends it via cable to the broadcast receiver.

D. Broadcast Receiver. The broadcast receiver converts the electrical impulses received from the signal booster into direct current (DC) signals. When the conversion to DC is complete the impulses are sent to the patch panel.

E. Patch Panel (Crypto). The patch panel deciphers the impulses using cryptologic software in the patch panel. After deciphering the impulses they are sent via cable to the DC signal processor.

F. DC Signal Processor. The DC signal processor contains software to read the message impulses for the Content Indicator Code, in this case, "IAZZ." The reading of the "IAZZ" by the DC signal processor triggers a mechanism that sends the processed signals to the paper tape punch. The DC signal processor also has a paper copy of the requisition message made by sending the processed signals to a teletype

printer. This process is also controlled by software installed in the DC signal processor.

G. Paper Tape Reader. The paper tape punch produces a paper tape of the requisition message from the signals received from the DC signal processor.

H. Paper Tape of Requisition Message. The paper tape of the requisition message is given to the Supply Department along with a paper copy of the requisition message.

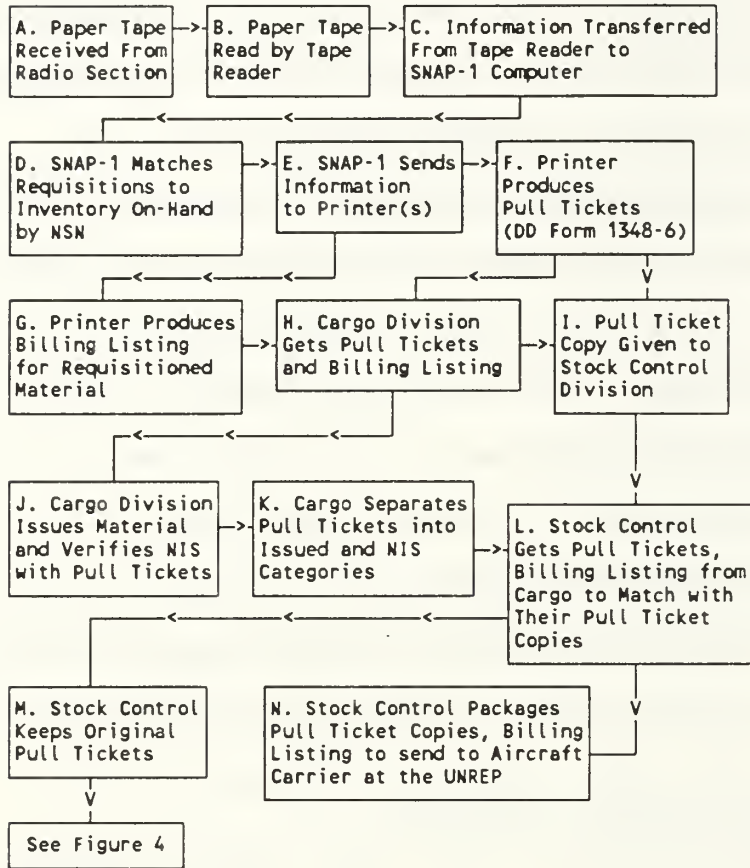
I. Teletype Printer. A teletype printer will make a paper copy of the requisition message using signals sent to it from the DC signal processor.

J. Paper Copy of Requisition Message. The paper copy of the requisition message is put with the paper tape of the requisition message and given to the Supply Department.

B. CURRENT AFS SUPPLY UNREP PROCEDURES

Figure 3 is a flow chart that shows the step-by-step AFS issue process for an aircraft carrier UNREP. The diagram begins at the point of the Supply Department's receipt of the aircraft carrier requisition message on a paper tape from the radio division. The AFS issue process concludes with the delivery to the requesting aircraft carrier of the requested material and the corresponding receipt documents or requisition cancellation documents for requested material that was not in stock.

Figure 3 - AFS Issue Process for an Aircraft Carrier UNREP



A. Paper Tape Received From Radio Section. The Radio Section delivers the paper tape copy of the requisition message from the aircraft carrier to the Supply Department.

B. Paper Tape Read by Paper Tape Reader. After the Supply Department receives the paper tape copy of the requisition message it is read by a paper tape reader.

C. Information Transferred From Paper Tape to SNAP-1. When the paper tape copy of the requisition message is read by

the paper tape reader, the information on the paper tape is transferred to the SNAP-1 computer. The SNAP-1 computer aboard the AFS has capabilities similar to the SNAP-1 computer on the aircraft carrier (see Chapter II).

D. SNAP-1 Matches Requisitions to AFS Inventory by NSN.

The SNAP-1 software allows the computer to read the inputs from the paper tape reader and match the requisitions from the aircraft carrier to the inventory on-hand on the AFS.

E. SNAP-1 Sends Information to Printer(s). After retrieving the on-hand balance for the NSN, SNAP-1 sends the required information to two different printers.

F. Printer Produces Pull Tickets. One printer produces the Pull Tickets. The Pull Tickets are the DD Form 1348-6's printed for each item to be issued. Pull Tickets are also printed for items that are shown as NIS in the AFS's SNAP-1 system.

Each 1348-6 is a six page pre-printed form with carbon paper between each page. Appendix 1 contains a reproduced copy of a DD Form 1348-6. When the AFS prints a 1348-6 for a carrier's requisition, it contains the aircraft carrier requisition number in Blocks 30-43, the stock number in Blocks 8-20, the quantity to issued in Blocks 25-29, the unit of issue in Blocks 23-24, the inventory location aboard the AFS in Block F, and the unit and extended prices in Blocks 74-80 and Block E. The AFS's on-hand inventory for the stock number shown in Blocks 8-20 is listed in Block Q of the DD Form 1348-

6. Requisitions identified as not in stock (NIS) will contain a zero in Block Q of the Pull Ticket.

G. Printer Produces Billing Listing of all Pull Tickets.

The second printer aboard the AFS produces a Billing Listing for all the Pull Tickets. The Billing Listing is a paper print-out of all aircraft carrier requisitions in requisition number sequence. All the information on the Pull Ticket is written in a single line. The Billing Listing may be used as a tracking document for each Pull Ticket, including NIS items.

H. Cargo Division Receives Pull Tickets, Billing Listing.

After the documents are printed, the Cargo Division receives the original plus four copies of the Pull Tickets. This includes the NIS Pull Tickets. The Billing Listing is also given to the Cargo Division for use in tracking the Pull Tickets.

I. One Pull Ticket Copy Goes To Stock Control Division.

One copy of the Pull Ticket is given to the Stock Control Division for tracking purposes and to guard against the other copies being lost or destroyed.

J. Cargo Division Issues Material, Verifies NIS Documents. Using the information on the Pull Tickets as a guide to the requested materials location, the Cargo Division issues the material requested on the Pull Tickets and verifies that the material listed on the NIS Documents is in fact not in stock. The Billing Listing is used by the Cargo Division to track all the Pull Tickets that are being used by its

personnel to find and issue the requested material for delivery. When on-hand material is issued from stock, the Pull Ticket is annotated manually by circling the quantity issued. The Pull Ticket is then signed and dated by the person making the issue. The Pull Tickets for issued material are then placed in an Issued Material Holding File.

The Pull Tickets for material that is NIS are verified by Cargo Division personnel by checking the material's location. Inventory "errors" on an AFS may result prior to an UNREP, as material is sometimes received by and stored aboard the AFS before the AFS's SNAP-1 inventory records are updated with the new receipts. In this case, SNAP-1 will identify material as NIS, although it has been received. The reverse may also happen when material is issued to a requesting ship and another issue process is initiated for another ship before the AFS can update its SNAP-1 computer with the issues it made to the first ship. Material in this situation will still show as being on-hand, although it in fact could be NIS. Once the NIS Pull Ticket is verified as being NIS, the Pull Ticket is manually annotated by the person performing the verification by circling the zero quantity, and signing and dating the Pull Ticket. The Pull Ticket is then placed in a NIS holding file.

K. Cargo Division Separates Pull Tickets as Issued or NIS. When the AFS Cargo Division completes the issue process, all the Pull Tickets are placed in either the issue holding file or the NIS holding file. The Billing Listing is

annotated with the NIS verifications, issues, and any changes noted when the Pull Tickets were placed in their respective holding file.

L. Stock Control Division Receives Holding Files and Billing Listing From Cargo Division. The NIS holding file, issue holding file, and Billing Listing are given to the AFS Stock Control Division by the AFS Cargo Division. The Stock Control Division then verifies that each annotated original Pull Ticket matches up with the Pull Ticket copy that was given to Stock Control earlier, and re-verifies the information on the original Pull Tickets with the annotations on the Billing Listing.

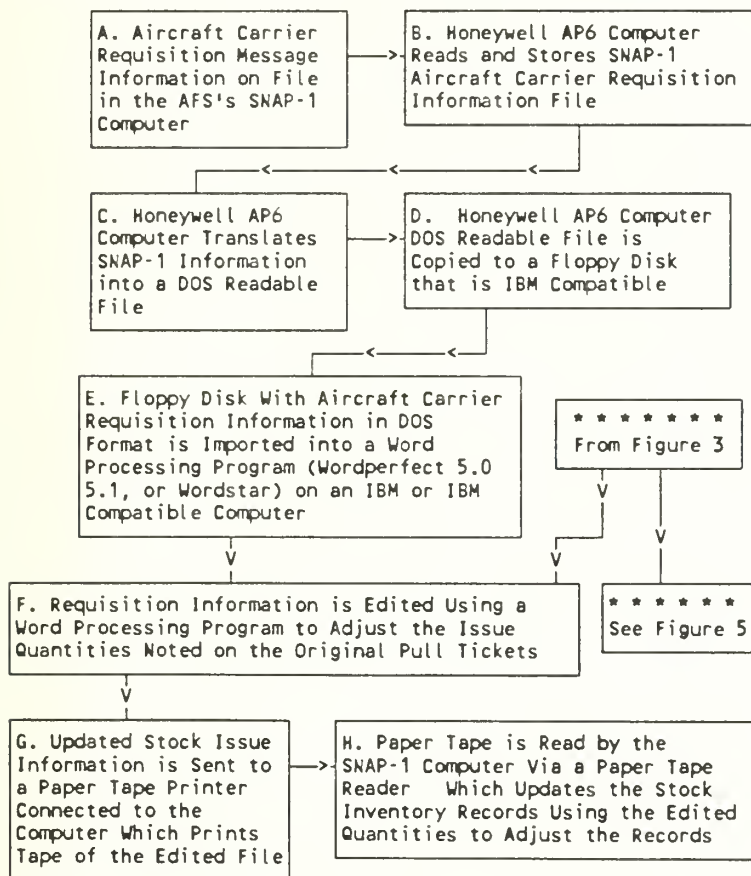
M. Stock Control Division Pulls Original Pull Tickets. When the verification process is done, Stock Control keeps the original Pull Tickets. The reason Stock Control keeps the original copy of each Pull Ticket will be discussed in Section C.

N. Stock Control Division Packages Remaining Pull Tickets and Billing Listing. The remaining copies of each Pull Ticket and the Billing Listing are packaged to be sent to the aircraft carrier during the UNREP. The Pull Ticket copies will act as the aircraft carrier's receipt documents. The Billing Listing is also used by the carrier, but as a tracer for receipt documents.

C. AFS'S POST-UNREP INVENTORY RECORDS UPDATE

The delivery of material and documentation during the UNREP is the end of the AFS's actual interaction with the aircraft carrier during the replenishment cycle. The AFS however, still must update its inventory records to complete the cycle. Figure 4 continues from Figure 3, showing how the AFS updates its SNAP-1 inventory records following the aircraft carrier UNREP.

Figure 4 - AFS's Post-UNREP Inventory Records Update



A. Aircraft Carrier Requisition Message on File in SNAP-1. The information found on the original Billing Listing on file in the AFS's SNAP-1 computer can be used to update the AFS's inventory records.

B. Honeywell AP6 Computer Reads and Stores SNAP-1 Files. The Honeywell AP6 Computer is connected to the SNAP-1 Computer and has been installed with software that allows it to read, and store information files from SNAP-1.

C. Honeywell AP6 Computer Translates SNAP-1 Files. The Honeywell AP6 software program has the capability to translate the information in the SNAP-1 files into DOS format files.

D. Honeywell AP6 Computer Copies DOS File to Diskette. The translated DOS file of the requisition message can be copied onto an IBM readable floppy diskette by way of the Honeywell AP6 Computer.

E. Requisition Message on Diskette Imported into IBM or Compatible Computer. The floppy diskette with the requisition message information in DOS format may be imported into many different IBM compatible word-processing programs, such as WordPerfect 5.0, 5.1, or Wordstar, using an IBM or IBM compatible computer.

F. Requisition Information Edited Using Word Processing Program. With the information now in an editable word processing program, the quantity that was originally requested may be adjusted to reflect the quantity actually issued. The annotated issue quantities on the original Pull Tickets (From Figure 3) are compared with the quantities requested on the original aircraft carrier requisitions. The requisition quantity differences are edited using the word processing program to reflect the updated issue quantities noted on the original Pull Tickets. A code command is also entered at the beginning of the file. When read by the SNAP-1 computer, the

code command will cause SNAP-1 to adjust the individual stock number's on-hand inventories by the quantities issued.

G. Updated Stock Issue Information Sent to Punch Tape Reader. The file with the code command and the updated issue quantities are transferred from the IBM or IBM compatible computer to an attached paper tape reader that has the ability to read DOS formatted files and translate them onto a paper tape.

H. Information on Paper Tape is Read into SNAP-1. The updated paper tape from the IBM computer is run through the paper tape reader connected to the SNAP-1 computer where the file containing the updated issue information is read by the SNAP-1 computer. The SNAP-1 computer's installed software program recognizes the code command at the beginning of the file and adjusts the on-hand stock inventory records by the quantity shown as being issued for each stock number. When the SNAP-1 computer completes adjusting the individual stock record inventories, the AFS is finished with the aircraft carrier UNREP cycle.

IV. A PROCEDURE TO FORWARD UNFILLED AIRCRAFT CARRIER REQUISITIONS

This chapter outlines a new procedure to allow an AFS to forward unfilled aircraft carrier FILL requisitions to the Navy Supply Center. This procedure will not require additional computer hardware or software beyond those that already exist aboard the aircraft carrier and the AFS. The changes incorporated in this new procedure do require additional information on the original aircraft carrier requisition message to the AFS. Additional responsibility will also need to be delegated to AFS Supply Department personnel to enable them to pass the unfilled requisitions.

The new procedure has been developed by maximizing the use of current aircraft carrier LOGREP requisitioning procedures and minimizing the additional work-load required of the AFS Supply Department personnel to conduct the new procedure. The new procedure requires the aircraft carrier to:

1. - identify the FILL requisitions to be passed by the AFS if NIS.
2. - supply the AFS with the additional MILSTRIP requisition data required to submit a requisition message to a Navy Supply Center via DAAS DAYTON OH.

The new procedure requires the AFS to do the following additional tasks:

1. - store a copy of the aircraft carrier requisition message in a word-processing program on an IBM or IBM compatible computer. This is accomplished by using a paper tape copy of the requisition message and having it transferred via a paper tape reader to the IBM or compatible personal computer.
2. - edit the aircraft carrier requisition message by:
 - a. - deleting those FILL requisitions not annotated to be passed.
 - b. - comparing the remaining aircraft carrier FILL requisitions on the edited requisition message with the not in stock AFS documents. After comparing the remaining requisitions on the carrier requisition message with the not in stock AFS documents the requisition message is re-edited by deleting those FILL requisitions that are in stock on the AFS.
3. - generate an out-going requisition message to DAAS OH for those carrier FILL requisitions that remain on the re-edited aircraft carrier requisition message.

The subsequent information provides a more detailed explanation of the new procedure. It also reviews an experiment conducted to estimate the additional time required of the AFS to generate the out-going requisition message.

The following is an edited example of a current requisition message to an AFS. The names of the actual ships involved and the Date-Time-Groups of the messages cited have been edited out.

IAZZ
091010Z DEC 91
FM USS REQUESTING AIRCRAFT CARRIER
TO USS AFS

UNCLASS//N04400

SUBJ UNREP REQUIREMENTS

REF/A NAVSUP PUB 4998
REF/B CTG MSG 12223Z NOV 91
REF/C USS REQUESTING AIRCRAFT CARRIER 199999Z NOV 91
REF/D USS AFS 140999Z NOV 91

RMKS/1. IN REGARDS TO REFERENCES A-D THE FOLLOWING REQUIREMENTS ARE SUBMITTED.

2. JULIAN DATE. 1220

3. FILL ITEMS

9415/007285761/EA/00002/00002/0940/NOI01
5863/003794439/EA/00048/00048/0941/NSS01
9884/007822183/CN/00002/00002/0942/NSS01
3727/002347678/EA/00018/00018/0943/NDC02
BT

Note: only four FILL requisitions are necessary to demonstrate the required changes recommended later in this Chapter.

The following information explains the different entries on the requisition message listed above.

IAZZ - Content Indicator Code discussed in Chapter II.

091010Z DEC 91 - Date-Time-Group is used to track messages and is assigned by the originator's Radio Division. The first two digits are the day of the month. The next four digits are the time of day that the message is received by the Radio Division for transmission. The next three letters are the abbreviated month, and the last two numbers are the last two numbers of the current year.

FM - indicates who the message is from, in this case the message is from the USS Requesting Aircraft Carrier.

TO - indicates who will receive this message for action purposes, in this case the message is to the USS AFS.

INFO - is not used in this message example but is in a message example in Section B of this chapter. It is used when

an originator sends a message to someone for informational purposes. The word INFO is typed on the message followed by the name of the receiving activity.

UNCLASS - is the classification of the message. There are four classifications: unclassified; confidential; secret; and top secret. The classification is used to limit the distribution of the message to only those personnel with the need to know what information is in the message. The classification is based on the sensitivity of the information contained in the message, i.e., national security information. The typical FILL requisition message is unclassified.

N04400 - is the General Subject Code. This is a code to describe a general subject area of the message and is used for filing and distribution purposes by the Radio Division. In this case N04400 is the General Subject Code for supply related information.

SUBJ - is the abbreviation for subject. The subject line is a very short descriptive title of the message's content, in this case UNREP Requirements.

REF/A-D - REF is the abbreviation for reference. References are used routinely in message traffic as they shorten the message by referring to information rather than explaining it. They also provide documentation for actions taken.

RMKS/1. - is the first paragraph/section of the message. This paragraph/section as well as the following ones is where the contents of the message placed.

2. - identifies the second section/paragraph. The second paragraph/section in this message indicates the Julian date to be used on all the requisitions submitted to the AFS. This date is used by the aircraft carrier as part of the requisition serial number for the lot of requisitions submitted in the message to the AFS.

3. FILL ITEMS - is the paragraph/section where the requisitions to be filled by the AFS are placed and in the format discussed in Chapter II.

BT - is used to identify the end of the message

A. RECOMMENDED CHANGES TO THE AIRCRAFT CARRIER REQUISITION MESSAGE TO AFS'S

The new procedure requires additional information on the aircraft carrier requisition message to allow the AFS to pass unfilled FILL requisitions. First the aircraft carrier has to identify and annotate the FILL requisitions on the requisition message it desires to be passed if NIS on the AFS. A carrier returning to homeport will not necessarily want all unfilled requisitions waiting on the pier for them as they return home. Therefore, the aircraft carrier must identify for the AFS the urgent FILL requisitions to be forwarded if NIS.

The second type of additional information that must be included in the requisition message for requisitions designated to be passed if NIS is the information required by the MILSTRIP standard (see Chapter III).

The following is an example of what the proposed aircraft carrier requisition message to an AFS would look like. It includes all the suggested aircraft carrier requisition message requirements previously discussed. In this example the requesting aircraft carrier has identified two FILL line items (FILL numbers 9415 and 3727) to be passed by the AFS to Navy Supply Center, San Diego if they are NIS on the AFS.

IAZZ
091010Z DEC 91
FM USS REQUESTING AIRCRAFT CARRIER
TO USS AFS

UNCLASS//N04400

SUBJ UNREP REQUIREMENTS
REF/A NAVSUP PUB 4998
REF/B CTG MSG 122223Z NOV 91
REF/C USS REQUESTING AIRCRAFT CARRIER 199999Z NOV 91
REF/D USS AFS 140999Z NOV 91

RMKS/1. IN REGARDS TO REFERENCES A-D THE FOLLOWING REQUIREMENTS ARE SUBMITTED.

RMKS/2. IT IS REQUESTED THAT ANY NIS FILL LINE ITEM REQUISITION THAT ENDS WITH *** MEDIA & STAUT CODE, FSCM, DEMAND CODE, SIGNAL CODE, FUND CODE, DISTRIBUTION CODE, PROJECT CODE, PRIORITY CODE, REQUIRED DELIVERY DATE, AND ADVICE CODE (IF USED), BE PASSED VIA DAAS OH TO NSC SAN DIEGO. ADDITIONAL MILSTRIP REQUISITION INFORMATION FOR ALL NIS FILL LINE ITEM REQUISITIONS TO BE FORWARDED FOLLOWS:

DOCUMENT IDENTIFIER - A0A
ROUTING IDENTIFIER - NDZ
UIC OF DOCUMENT NUMBER - V46022

3. JULIAN DATE 1220

4. FILL ITEMS

9415/007285761/EA/00002/00002/0940/NOI01***2/6691/R/A/YR/9N/
EJ5/06/777/2B
5863/003794439/EA/00048/00048/0941/NSS01
9884/007822183/CN/00002/00002/0942/NSS01
3727/002347678/EA/00018/00018/0943/NDC02***2/5781/R/A/YC/9M/
EK5/06/777
BT

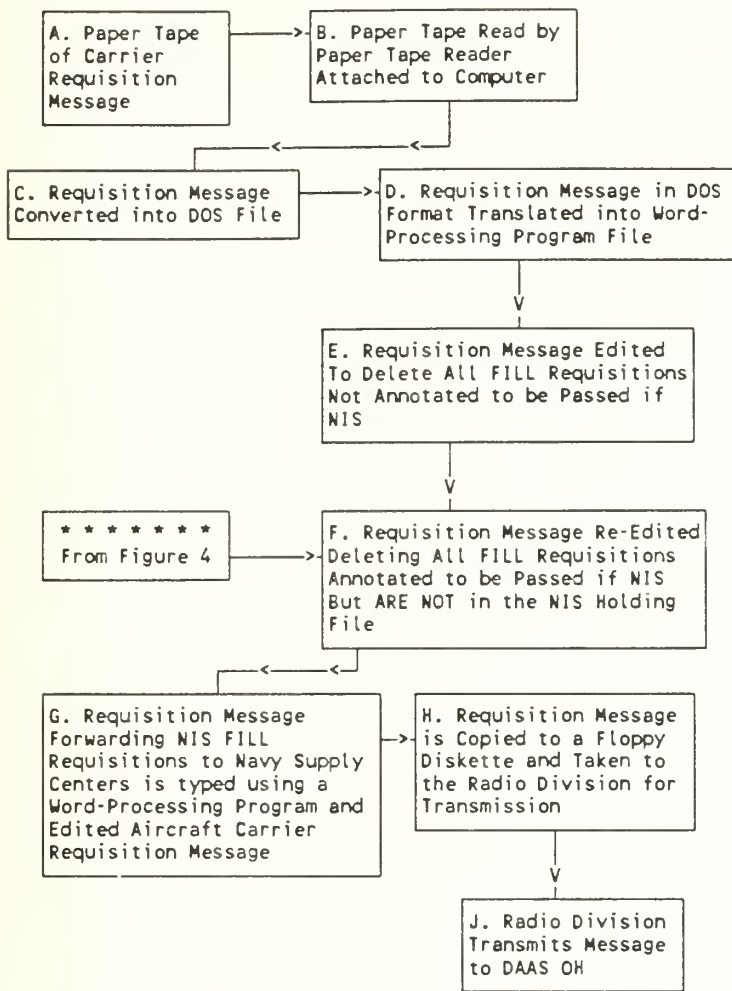
All the required requisition information to pass unfilled FILL requisitions to a Navy Supply Center via DAAS by an AFS is present in this UNREP requirements message. All of the MILSTRIP requisition items are required, but the data for each one can vary from requisition to requisition as presented in Chapter II, and explained in the Navy Supply Publication 485.

B. RECOMMENDED AFS SUPPLY SUPPORT PROCEDURES TO PASS DESIGNATED UNFILLED AIRCRAFT CARRIER FILL REQUISITIONS

The AFS supply support process was discussed in Chapter III, with Figures 3 and 4 showing the current supply support process as well as the hardware and software capabilities available aboard the AFS. No changes to the message handling equipment or capabilities aboard the AFS are required to implement the new procedure. However additional labor to generate the out-going requisition message for the carrier NIS FILL requisitions will be required of the AFS personnel.

Figure 5 depicts a step-by-step process that allows the AFS to pass designated unfilled aircraft carrier FILL requisitions via DAAS to a Navy Supply Center.

Figure 5 - Procedure to Pass Unfilled Aircraft Carrier FILL Requisitions



A. Paper Tape Copy of the Requisition Message. This paper tape copy of the requisition message is the original that was used to transfer the requisition message into the SNAP-1 system.

B. Paper Tape Read by Paper Tape Reader. The requisition message information on the paper tape is read by a paper tape reader onto an attached IBM or IBM compatible computer hard drive.

C. Information Converted into a DOS File. A software program in the IBM or compatible personal computer converts the information into a DOS file on the computer's hard drive.

D. DOS File is Translated into Word-Processing Program. The requisition message in the DOS file is translated into a word-processing program file on the computer. The word-processing program (e.g., WordStar or WordPerfect 5.0, 5.1) is then used to call up the file with the requisition message in it and display the requisition message on the computer's monitor as it appears on the original paper hard copy.

E. Requisition Message Edited. Using the word-processing program the requisition message can be edited to delete all the FILL requisitions not annotated to be passed if NIS.

The same sample requisition message given in Section A is shown below after having been edited as in Step E.

IAZZ
091010Z DEC 91
FM USS REQUESTING AIRCRAFT CARRIER
TO USS AFS

UNCLASS//N04400

SUBJ UNREP REQUIREMENTS
REF/A NAVSUP PUB 4998
REF/B CTG MSG 122223Z NOV 91
REF/C USS REQUESTING AIRCRAFT CARRIER 199999Z NOV 91
REF/D USS AFS 140999Z NOV 91

RMKS/1. IN REGARDS TO REFERENCES A-D THE FOLLOWING REQUIREMENTS ARE SUBMITTED.

RMKS/2. IT IS REQUESTED THAT ANY NIS FILL LINE ITEM REQUISITION THAT ENDS WITH *** MEDIA & STAUS CODE, FSCM, DEMAND CODE, SIGNAL CODE, FUND CODE, DISTRIBUTION CODE, PROJECT CODE, PRIORITY CODE, REQUIRED DELIVERY DATE, AND ADVICE CODE (IF USED), BE PASSED VIA DAAS OH TO NSC SAN DIEGO. ADDITIONAL MILSTRIP REQUISITION INFORMATION FOR ALL NIS FILL LINE ITEM REQUISITIONS TO BE FORWARDED FOLLOWS:

DOCUMENT IDENTIFIER - A0A
ROUTING IDENTIFIER - NDZ
UIC OF DOCUMENT NUMBER - V46022

3. JULIAN DATE 1220

4. FILL ITEMS

9415/007285761/EA/00002/00002/0940/NOI01***2/6691/R/A/YR/9N/
EJ5/06/777/2B

3727/002347678/EA/00018/00018/0943/NDCO2***2/5781/R/A/YC/9M/
EK5/06/777

BT

Note: the two FILL requisitions without additional requisition information were deleted.

F. Requisition Message Re-edited. The next step in the new procedure is to re-edit the requisition message after the actual stock status of each item has been determined. This step is accomplished by taking the FILL requisitions in the NIS holding file (from Figure 4) and comparing them with the FILL requisitions still listed on the edited message. Those requisitions still listed on the requisition message that are not in the NIS holding file are deleted. The FILL requisitions that are absent from the NIS holding file have been issued.

The following information is the data from a simulated Pull Ticket in a NIS holding file.

9415/007285761/EA/00002/00002/0940/NOI01

The following is an example of the re-edited requisition message that results after comparing the simulated NIS holding file with the edited requisition message.

IAZZ

091010Z DEC 91

FM USS REQUESTING AIRCRAFT CARRIER

TO USS AFS

UNCLASS//N04400

SUBJ UNREP REQUIREMENTS

REF/A NAVSUP PUB 4998

REF/B CTG MSG 122223Z NOV 91

REF/C USS REQUESTING AIRCRAFT CARRIER 199999Z NOV 91

REF/D USS AFS 140999Z NOV 91

RMKS/1. IN REGARDS TO REFERENCES A-D THE FOLLOWING REQUIREMENTS ARE SUBMITTED.

RMKS/2. IT IS REQUESTED THAT ANY NIS FILL LINE ITEM REQUISITION THAT ENDS WITH *** MEDIA & STAU CODE, FSCM, DEMAND CODE, SIGNAL CODE, FUND CODE, DISTRIBUTION CODE, PROJECT CODE, PRIORITY CODE, REQUIRED DELIVERY DATE, AND ADVICE CODE (IF USED), BE PASSED VIA DAAS OH TO NSC SAN DIEGO. ADDITIONAL MILSTRIP REQUISITION INFORMATION FOR ALL NIS FILL LINE ITEM REQUISITIONS TO BE FORWARDED FOLLOWS:

DOCUMENT IDENTIFIER - AOA

ROUTING IDENTIFIER - NDZ

UIC OF DOCUMENT NUMBER - V46022

3. JULIAN DATE 1220

4. FILL ITEMS

9415/007285761/EA/00002/00002/0940/NOI01***2/6691/R/A/YR/9N/EJ5/06/777/2B

BT

G. Forwarding NIS FILL Requisition Message is Typed.

Using the word-processing program, the requisition message forwarding the NIS FILL requisition to a Navy Supply Center via DAAS can be typed. The requisition message may be constructed by copying and moving the remaining information in the re-edited carrier requisition message. An example of the MILSTRIP requisition message to be sent to DAAS and routed to the appropriate Navy Supply Center from the AFS is provided below.

ZYUW

102020Z DEC 91

FM USS AFS
TO DAAS DAYTON OH
INFO USS REQUESTING AIRCRAFT CARRIER

REF/A USS REQUESTING AIRCRAFT CARRIER 091010Z DEC 91

A0A/NDZ/2/6691007285761/EA/00002/V4602212200940/R/NOI01/A/YR
/9N/EJ5/06/777/2B

BT

Note the requesting aircraft carrier is added on the MILSTRIP requisition message. The addition of this INFO address will allow the requesting aircraft carrier to receive the MILSTRIP requisition message for information and tracking purposes.

The Content Indicator Code "ZYUW" is used on requisition messages to DAAS. DAAS's Automatic Digital Network has been set up to receive the Content Indicator Code "ZYUW" for non-casualty requisition messages.¹⁵

DAAS messages do not require a classification, subject code or subject line. MILSTRIP information is never classified, therefore DAAS does not require a classification line. The message is received and the Content Indicator Code triggers the DAAS system to read the MILSTRIP requisitions and route them to the respective Navy Supply Center according to the Routing Identifier. The message is not copied or filed by

¹⁵Ibid, pg. 3-45 to 3-46, para. 3028.2.

DAAS, therefore DAAS does not require a subject code or subject line.

H. Requisition Message is Copied to Floppy Diskette.

The edited requisition message is saved in a word-processing file and copied to a floppy diskette. The floppy diskette with the requisition message file, is taken to the Radio Division.

I. Radio Division Transmits the Requisition Message.

Personnel from the Radio Division place the floppy diskette in an IBM or compatible computer so it can be read by the Radio Division computer system. The computer is connected to the radio transmission equipment. When the requisition message is loaded in the computer, a person in the Radio Division gives a transmit command to the computer. This input initiates a software program within the computer that sends the information from the computer into the connected radio transmission system. The requisition message is converted into electrical impulses and transmitted off the AFS via an antenna.

C. **ADDITIONAL AFS WORK-LOAD REQUIREMENTS TO FORWARD UNFILLED AIRCRAFT CARRIER FILL REQUISITIONS**

The generation of the outgoing MILSTRIP requisition message to DAAS OH from the AFS with the unfilled aircraft carrier FILL requisitions is necessary to complete the requisition forwarding process. The additional AFS workload

to generate the requisition message to forward the requisitions includes the accomplishment of the following tasks:

1. Loading of the aircraft carrier requisition message onto the IBM, or IBM compatible computer, via the paper tape reader.
2. Editing the original message by deleting those items not identified to be passed if NIS.
3. Comparison and re-editing of the requisition message with the NIS holding file.
4. Typing the MILSTRIP requisition message to DAAS DAYTON OH using the edited information from the aircraft carrier requisition message.
5. Copying the outgoing requisition message file to DAAS DAYTON OH onto a floppy diskette.
6. Delivering the floppy diskette with the copy of the outgoing requisition message to DAAS DAYTON OH to the Radio Division for transmission.

The time consuming part of the additional work load requirement is the editing, re-editing, typing, and forwarding of the requisition message to DAAS OH. Using the copy, merge, and move features within a word-processing program, the creation of the outgoing requisition message to DAAS is not difficult.

D. EXPERIMENT TO ESTIMATE THE TIME TO CREATE A DAAS REQUISITION MESSAGE FORWARDING NIS AIRCRAFT CARRIER FILL REQUISITIONS

To estimate the time required to incorporate the additional workload associated with the creation of a requisition message forwarding NIS aircraft carrier FILL requisitions a simple experiment was conducted. This experiment involved five people with no knowledge of the

supply system or supply procedures. The five people were given a sample DAAS requisition message as a guide and asked to type a requisition message to DAAS DAYTON OH using the information given in Appendices Two and Three. The following information describes the equipment used and the instructions given to each participant.

1. Each person used an IBM compatible computer with a word-processing program.
2. Each person was given an IBM compatible floppy diskette with identical copies of Appendices Two and Three, and a paper copy of an outgoing AFS requisition message to DAAS DAYTON OH, to use as a guideline.
3. Each person was given the following directions.
 - a. Delete those requisitions not annotated in the aircraft carrier requisition message (Appendix Two).
 - b. Delete the requisitions on the aircraft carrier requisition message not listed in the NIS holding file (Appendix Three).
 - c. Type an outgoing requisition message using the sample DAAS requisition message provided as a guide. The outgoing requisition message will incorporate the requisitions left on the aircraft carrier requisition message and be placed under the FILL ITEMS section of the message in the MILSTRIP format. (The MILSTRIP format was explained to each participant and examples were provided in the sample DAAS requisition message.)
 - d. Begin timing when they started to edit the original aircraft carrier requisition message. Stop timing when they completed the requisition message to DAAS DAYTON OH.

A completed outgoing requisition message to DAAS DAYTON OH is illustrated in Appendix Four. This message contains all the NIS FILL requisitions that were annotated in Appendix Two to be forwarded if NIS and found in the NIS holding file

(Appendix Three). The outgoing requisition message (Appendix Four) with ten NIS FILL requisitions took an average of 64.8 minutes to complete. Table 1 shows the results for each participant:

Table 1 - Experiment Results

<u>Participant</u>	<u>Time to Complete/Min</u>
A	52
B	76
C	47
D	72
E	<u>77</u>
Total	324
Average	64.8

On a six month deployment a requisition message submitted to an AFS contains on the average eighty FILL requisitions.¹⁶ Table 2, provides the FILL Gross Effectiveness rates during a six month operational deployment by the USS Mars (AFS-1).

¹⁶Interview between S. Crozier, Lt. SC, USN, USS Mars (AFS-1), and the author, 2 October 1991.

Table 2 - AFS Gross Effectiveness Rates

<u>Month</u>	<u>Total Demand</u>	<u>Not Carried</u>	<u>Not In Stock</u>	<u>Gross Effectiveness</u>
JAN	2699	48	73	95.51
FEB	646	8	15	96.43
MAR	3566	18	173	94.64
APR	*** Data not available ***			95.38
MAY	353	24	13	89.51
JUN	<u>232</u>	<u>44</u>	<u>15</u>	74.57
Total	7496	142	289	

$$\text{Gross Effectiveness} = \frac{7496 - 142 - 289}{7496} = 94.25\%$$

Gross Effectiveness based on five months of data is 94.25%. Based on this information, an AFS receiving approximately eighty FILL requisitions per requisition message will issue approximately 94 percent of the material requested by the carrier. The AFS will have 3 NIS FILL requisitions per requisition message according to the figures provided. If personnel inexperienced and uneducated in the area of supply requisitioning procedures can type a requisition message for ten NIS FILL requisitions in 64.8 minutes, the AFS Supply Department personnel should be able to handle 3 such requisitions in even less time. Therefore, the amount of time aboard the AFS to process the NIS FILL aircraft carrier requisitions into a requisition Message to DAAS DAYTON OH should only involve less than a hour of additional work. This

increase in workload would not require extra personnel to be assigned to the AFS.¹⁷

Even though the mechanics of the proposed new procedure will work, the data provided may not give all the information to assess in detail the effectiveness of implementing the new procedure. The gross effectiveness rate of the AFS is based on five months data and includes all requisition messages submitted by carriers during that period. It does not necessarily indicate what the AFS's gross effectiveness rate will be for the last requisition message received from a carrier. The average of 80 FILL requisitions per requisition message received from an aircraft carrier is for all requisition messages received by an AFS, not the last one. Therefore, the actual mean number of requisitions in the carrier's last requisition message could be different from the average over all requisition messages. Further more, the AFS's NIS rate could be higher for last UNREPs than for the "average" UNREP. The gathering and evaluation of data from the carrier's last requisition message to an AFS, and the AFS's gross effectiveness and NIS rates in relation to the last carrier requisition message are recommended in Chapter V for follow-on research topics.

¹⁷Interview between S. Crozier, Lt. SC, USN, USS Mars (AFS-1), and the author, 29 November 1991.

V. SUMMARY, ADVANTAGES, AND RECOMMENDED FOLLOW-ON RESEARCH

A. SUMMARY

In the original proposal for this thesis, the concept was to develop a procedure for an AFS to pass all unfilled aircraft carrier FILL requisitions. As discussed in Chapter I, it was learned that the full implementation of the proposed procedure would not reduce the delivery time in all situations. Specifically, it was found that if the FILL material requisitioned by the carrier was NIS aboard the AFS, then the AFS would have most likely submitted a replenishment requisition to a Navy Supply Center for the NIS FILL material. The AFS replenishment material would arrive sooner than the material for a carrier requisition passed at a later date.

Another concern was that the aircraft carrier might not want all of the FILL requisitions that were cancelled on its last UNREP to be forwarded by the AFS. After a deployment a carrier returns to its homeport and goes into a stand down period to allow as much of the crew as possible to take leave. Therefore the carrier might not want certain NIS FILL requisitions passed by the AFS due to the manpower required to load the material onto the carrier at its homeport. This would be especially true for requisitions that aren't considered particularly urgent by the aircraft carrier.

The new procedure to pass unfilled aircraft carrier FILL requisitions is functional and practical when used during the last UNREP prior to the end of an aircraft carrier's overseas operational commitment and its return to homeport. The process does afford the aircraft carrier an opportunity to avoid the cancellation and re-generation of FILL requisitions that were NIS on the AFS. The lead-time required to get the NIS FILL requisition to the Navy Supply Center for issuance and storage for the aircraft carrier's acceptance upon return to its homeport is also reduced. The procedure to forward unfilled FILL requisitions at the aircraft carrier's last UNREP provides for a reduction in administrative work for the aircraft carrier and reduces the administrative lead-time for the NIS FILL requisitions submitted to a Navy Supply Center.

We've shown that it is feasible to develop a procedure that would allow an AFS to pass unfilled aircraft carrier requisitions to a Navy Supply Center for processing. The unfilled aircraft carrier FILL requisition forwarding process does not require any additional hardware or software aboard the AFS. While modifications to the present carrier requisition message to the AFS are required, they are limited to those entries that are needed to forward a MILSTRIP requisition via DAAS OH to a Navy Supply Center. Finally, an estimate of the additional workload required of the personnel

aboard the AFS indicates that no additional personnel are required to institute the new procedure.

B. ADVANTAGES OF FORWARDING UNFILLED AIRCRAFT CARRIER FILL REQUISITIONS

Based on current deployment cycles, it is estimated that each aircraft carrier will be able to use the new procedure between three and four times each year.¹⁸ This estimate is based on annual operational deployments that include one 4-6 month deployment and two to three, 30 to 60 day deployments. With fourteen operational aircraft carriers in the fleet this procedure is estimated to be used between 42 and 56 times each year. These estimates are based on peace-time operational demands.

The following is a list of advantages gained by implementing the NIS requisition forwarding procedure. The determination of the specific value of some of the benefits described below are suggested as follow-on research topics in Section C of this chapter.

1. The first improvement is in the reduction of aircraft carrier NIS requisition lead-time gained by the AFS passing the NIS FILL requisition. This advantage alleviates additional costs associated with expediting and express

¹⁸Telephone conversation between G. Collins, LCDR, SC, USN, Code N4211, CINCLANTFLT, Norfolk, Va., and the author, 29 November 1991.

shipping material that could become unnecessarily urgent due to longer lead-times.

This procedure precludes waiting until the UNREP for the notification of the cancellation of the NIS FILL requisitions. The aircraft carrier will not have to administratively cancel the NIS FILL requisitions and re-order them. The estimated requisition lead-time gained by using this procedure is from one day to two weeks, depending on the overall frequency of aircraft carrier UNREPS and the receipt date of the aircraft carrier's requisition message by the AFS. The frequency of the UNREPS is affected by different Fleet guidelines for AFS operations, the operational tempo, and the type of ships operations being conducted, and the distance to an AFS replenishment site.

2. An additional advantage of this procedure is the reduction in labor and material costs aboard the aircraft carrier. The savings results from not using the labor and materials necessary to cancel the requisitions for NIS FILL material, and from not having to generate a new requisition message to DAAS DAYTON OH. This overall savings would be offset by the cost incurred by the AFS for the additional work the AFS personnel would undertake to generate the out-going requisition message to DAAS OH.

Based on the experiment conducted in Chapter IV, Section B, it can be assumed that it should take no longer than one hour for an experienced, knowledgeable Supply Petty Officer

aboard the AFS to generate an outgoing requisition message with the designated aircraft carrier's NIS FILL requisitions. This assumption is based on the information obtained from an AFS that the average number of FILL requisitions per requisition message received is 80 and the AFS issue rate is 94.25 percent. The outgoing requisition message will therefore contain approximately 3 documents if all the NIS FILL requisitions are designated to be passed by the aircraft carrier. Using a First Class Petty Officer with twelve years experience for approximately one hour at an hourly rate determined by dividing his base salary by 52 (weeks) and again by 40 (hours per week) the total labor cost would be \$9.87.

If the aircraft carrier had to order the same material the actual time and cost to type the requisition message would be the same. However, additional labor cost would be required to administratively cancel the FILL requisition and generate a new requisition document prior to the requisition message being drafted. The actual amount of time and cost saved by not having to cancel the requisition and generate a new document is an area that is suggested for follow-on research.

C. RECOMMENDED NEW AND FOLLOW-ON RESEARCH AND TOPICS AND STUDIES

This research identified several areas as potential new or follow-on research topics. The topics included the following:

1. An actual test and analysis to implement the proposed procedure. This research would involve a prototype operation and/or actual experiment to estimate the feasibility, cost, and benefits of the proposed procedure.

2. A study of the actual cost savings gained by the reduction in NIS FILL requisition lead-time, and the reduction in workload for the aircraft carrier by not cancelling and re-ordering NIS FILL material. This proposed area of follow-on study would also include the study of variation in requisition lead-times in the different operating fleets and operational UNREP cycles that an aircraft carrier is involved in.

3. The review of potential applications of the proposed procedure to other types of material requisitioned from an AFS. This would include other items listed in the CARGO such as hull items, AO Deck Load, Ships's Store stock, and requirements for provisions.

4. The study of the application of the proposed procedure to other types of ships that are supported by an AFS. This would include a feasibility study to ascertain the implementation possibilities of the procedure to forward NIS FILL requisitions for cruisers, destroyers, frigates, etc.

5. Another area recommended for follow-on research was mentioned in Chapter IV, it included research into the gross effectiveness rates of the AFS for a carrier's last UNREP, as well as the determination of the mean for FILL requisitions on the last carrier requisition message. This research would

require the surveying of several aircraft carriers to provide data pertaining to the last requisition message they submitted to an AFS. The data requested would include the number of FILL requisitions on the carrier's requisition message and the percentage of requisitions that were cancelled by the AFS after the UNREP. This information could be used to figure the mean requisitions on the carrier's last requisition message to an AFS and compute the AFS effectiveness rate for the carrier's last UNREP.

It was also noted by the author that additional research could be conducted on AFS not carried rates, especially during the time-frame when the CARGO is updated. Since the updated CARGO isn't always received by all ship at the same time research could be done to analyze the change in AFS not carried rates during this time-frame and the impact of not using the most up to date edition of the CARGO.

6. The last area to be considered for potential research was identified not as a follow-on study to the proposed procedure, but as a hardware and/or software consideration. During this thesis, the degree to which the AFS relies on the use of paper tape was noted. It was also noted how much manual labor is involved in using this storage medium to transfer information between different information systems. It is recommended that research be conducted to develop and implement a method for electronic transfer of information internal to the AFS. This would include the transfer of

message information received from the Radio Division of the AFS to all types of information systems used aboard, including SNAP-1, and IBM or IBM compatible personal computers. If this technology is already available, then a cost-benefit study should be conducted to analyze the implementation and operation of this technology aboard an AFS.

APPENDIX A

AFS PULL TICKET (1348-6)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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APPENDIX B

EXAMPLE OF AN AIRCRAFT CARRIER REQUISITION MESSAGE TO AN AFS

IAZZ
091010Z DEC 91
FM USS REQUESTING AIRCRAFT CARRIER
TO USS AFS

UNCLASS//N04400

SUBJ UNREP REQUIREMENT

REF/A NAVSUP PUB 4998
REF/B CTG MSG 122223Z NOV 91
REF/C USS REQUESTING AIRCRAFT CARRIER 199999Z NOV 91
REF/D USS AFS 140999Z NOV 91

RMKS/1. IN REGARDS TO REFERENCES A-D THE FOLLOWING REQUIREMENTS ARE SUBMITTED.

RMKS/2. IT IS REQUESTED THAT ANY NIS FILL LINE ITEM REQUISITION THAT ENDS WITH *** FSCM, FUND CODE, DISTRIBUTION CODE, AND ADVICE CODE IF USED, BE PASSED VIA DAAS OH TO NSC SAN DIEGO. ADDITIONAL MILSTRIP REQUISITION INFORMATION FOR ALL NIS FILL LINE ITEM REQUISITIONS TO BE FORWARDED FOLLOWS:

DOCUMENT IDENTIFIER - AOA
ROUTING IDENTIFIER - NDZ
UIC OF DOCUMENT NUMBER - Y46022
MEDIA & STATUS CODE - 2
DEMAND CODE - R
PROJECT CODE - EJ5
SIGNAL CODE - A
PRIORITY DESIGNATOR - 06
REQUIRED DELIVERY DATE - 777

3. JULIAN DATE 1220

4. FILL ITEMS

9415/007285761/EA/00002/00002/0940/NOI01***6691/YR/9N/2B
5863/003794439/EA/00048/00048/0941/NSS01
9884/007822183/CN/00002/00002/0942/NSS01
3727/002347678/EA/00018/00018/0943/NDC02***5781/YC/9M

3657/002312373/EA/00144/00144/0944/NSS01***6234/YC/9M
0965/012561094/QT/00008/00008/0945/NSS01***4561/YR/9N/2B
1608/011839768/BX/00035/00035/0946/NSS01
1663/012598231/BT/00022/00022/0947/NSS01***3214/YR/9N
7180/005261129/GL/00009/00009/0948/NSS01***6541/YC/9L
1470/001061823/EA/00003/00003/0949/L1106***9854/YC/9K
1171/009265244/EA/00010/00010/0950/NDW19***6584/YC/9L
2040/001444989/DZ/00020/00020/0951/NSS02***5478/YR/9N
3668/002316473/EA/00015/00015/0952/NSS02***3256/YR/9M
6439/004446500/EA/00024/00024/0953/NXX01
8065/005885855/EA/00012/00012/0954/NSS01***8965/YR/9N
1104/008804454/BX/00020/00020/0955/NOI01***4589/YC/9L
5863/002646722/BT/00024/00024/0956/NOI01
4341/002053151/EA/00006/00006/0957/NSS01***3687/YC/9P
3728/223247679/EA/00012/00012/0958/NSS01***7621/YC/9L
9884/007822183/CN/00002/00002/0959/NXX01***8214/YR/9N
BT

APPENDIX C

SIMULATED NIS HOLDING FILE

9415/007285761/EA/00002/00002/0940/NOI01
0965/012561094/QT/00008/00008/0945/NSS01
1663/012598231/BT/00022/00022/0947/NSS01
7180/005261129/GL/00009/00009/0948/NSS01
1470/001061823/EA/00003/00003/0949/L1106
3668/002316473/EA/00015/00015/0952/NSS02
8065/005885855/EA/00012/00012/0954/NSS01
1104/008804454/BX/00020/00020/0955/NOI01
3728/223247679/EA/00012/00012/0958/NSS01
9884/007822183/CN/00002/00002/0959/NXX01

APPENDIX D

EXAMPLE OF AN OUTGOING AFS REQUISITION MESSAGE TO DAAS
DAYTON OH

ZYUW
102020 DEC 91
FM USS AFS
TO USS DAAS DAYTON OH
INFO USS REQUESTING AIRCRAFT CARRIER

REF/A USS REQUESTING AIRCRAFT CARRIER 091010Z DEC91

AOA/NDZ/2/6691007285761/EA/00002/V4602212200940/R/NOI01/A/YR
/9N/EJ5/06/777/2B
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/9N/EJ5/06/777/2B
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/9N/EJ5/06/777
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/9L/EJ5/06/777
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/9M/EJ5/06/777
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/9L/EJ5/06/777
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/9L/EJ5/06/777
AOA/NDZ/2/8214007822183/CN/00002/V4602212200959/R/NXX01/A/YR
/9N/EJ5/06/777

BT

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AFS to pass unfilled
aircraft carrier FILL
requisitions to a
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